black, of which colour there is also a short longitudinal contiguous black streak. The inner margin of the fore wings in the male is emarginate in the middle. The wings are not nearly so long and narrow as in *D. Horsfieldii*, and they are slightly transparent, so that the large ocelli on the underside of the hind wings are slightly visible from above. The species is nearly allied to *D. Catops*, Bdv., D. W. & H. Gen. D. Lep. p. 335.

XXI. *On the Nest of* Polistes Lanio, *Fab. and a Parasite found therein, and on the Nest of a Social Wasp.* By F. Smith, Esq.

[Read 7 April, 1851.]

John Mac Gillivray, Esq., Naturalist to Her Majesty's Ship Rattlesnake, lately presented to the British Museum the nest of a South American species of *Polistes*, which he says is very abundant at St. Salvador, where even in the streets it attaches its nest under the eaves of houses; the species is the *Polistes Lanio* of Fabricius, and in all probability the *Vespa Canadensis* of Linnæus; a specimen of the species is preserved in the Banksian Cabinet. On examining the nest, I found it consisted as usual of a single comb of cells, having in the centre at the back a short footstalk, by which the nests are attached in their position; the comb contained sixty-five cells, the outer ones being in an unfinished state, whilst twenty-two of the central ones had remains of exuviæ in them, and one or two closed cells contained perfect insects ready to emerge; about half a dozen of the wasps had the anterior portion of their bodies buried in the cells, in the manner in which these insects are said to repose. In one cell I observed the head of an insect evidently of a different species, it being black and shining. On extricating it, I discovered it to be a species of *Trigonalys;* I subsequently carefully expanded the insect, and it proved to be the *Trigonalys bipustulatus*, described by myself in the Ann. and Mag. of Natural History, vol. vii., 2nd Series, 1851, from a specimen captured at Para by Mr. Bates, now in the possession of William Wilson Saunders, Esq. The insect was not enveloped in any pellicle, nor had the cell been closed in any way; the wings were crumpled up at its side, as is usual in Hymenopterous insects which have not expanded them, proving satisfactorily that it had never quitted the cell, and that *Trigonalys* is the parasite of *Polistes*.

This discovery is one of much interest, proving the relationship of the insect to be amongst the pupivora, to which family it had been previously assigned by Mr. Westwood, see Vol. III. Ent. Trans. p. 270. The specimen is seven lines in length, entirely black, the head shining, the thorax and abdomen opaque, and having two white maculæ touching the apical margin of the basal segment above; the wings are smoky, the antennæ broken off. Of one of them I found subsequently seventeen joints—the perfect insect in the possession of Mr. Saunders having twenty joints.

Another exceedingly interesting nest has also been lately presented to the British Museum; it is that of a species of social wasp, but unfortunately it did not contain any specimen of the insect. The peculiar interest attached to this nest arises from the nature of the material of which it is composed, it being constructed entirely of clay, or, more correctly probably, of sandy loam; in form it is somewhat egg-shaped, blunted at each end, the longest diameter being $10\frac{1}{4}$ inches, the shortest $8\frac{1}{4}$; at the upper end is an opening, through which the branch to which it was suspended has passed, and the shell at this part is three quarters of an inch thick, from which it becomes gradually thinner towards the bottom, where it is about the eighth of an inch in thickness: down one side is an oblong slit six inches in length and nearly a quarter wide, the margins of which are about half an inch in thickness; but it can be ascertained that it is not equally so all round, but merely so for the purpose of strengthening the entrance to the nest. The nest contains six combs, placed as usual horizontally, the cells being downwards; the backs of the combs are deeply concave, and have been apparently attached by their entire margins to the exterior shell, the oblong slit giving free ingress to each chamber. From the broken state of the nest a vast number of cells are visible, but I cannot detect any difference in the size of them, each being two lines in diameter from the two parallel sides of the hexagons. This would lead one to suppose that there can be little or no difference in the size of the sexes of the inhabitants, and that the species is one of those which are allied to the genus *Myrapetra* of White, and of which I myself possess about thirty distinct species, the sexes of which appear to differ but slightly in size. The cells, which are of the most regular and beautiful construction throughout, are continued beyond their margins, in some instances into the shell itself, but none of these are carried beyond a shallow excavation. There is no coating or glazing of

any kind either on the back of the combs or on the exterior of the shell itself; the latter is of so hard a consistency that it blunted a watch-saw, which was used by the gentleman who presented the nest in making an opening in one of the sides. The cells, although exceedingly thin and delicate in appearance, allow of the hand being passed with some degree of pressure over them without the slightest injury. The outer surface of the shell has a remarkable mottled appearance, caused by the different colour of small dabs of mud plastered on by the wasps. The surface is therefore rendered uneven by these small and countless additions; indeed one is lost in admiration of the untiring perseverance and the exquisite skill of the tiny architects.

One circumstance is very remarkable, and for which I can in no satisfactory way account. Although such an immense number of cells are exposed to view, I cannot detect in any of them the slightest vestige of exuviæ or other matter bearing evidence of the nest having had inhabitants; all the cells are uniformly fresh in appearance and as clean as if they had never been occupied. Usually an old or recently commenced nest may be at once determined by such evidence; but here we have a nest apparently perfect, filled with combs, and not any trace left behind of the occupancy of its constructors; in all probability the economy of these wasps differs in some particulars from that of any species with which we are at present acquainted.

Note.—*Since reading the above notice on the nest of* Polistes, *I have discovered that* Trigonalys bipustulatus *is described and figured by De Geer, in his Mem. Hist. Ins., vol.* 3, *under the name of* "Sphex compressa;" *the specific name of* bipustulatus *will consequently fall.*